

DEVELOPMENT OF THE KSR-III UV RADIOMETER

Seung-Hyun Hwang, Jhoon Kim, Seung-Hoon Lee,
Joon-Kyu Kim, Young-Doo Chun, Sung-Wan Kim,
and Jung-Joo Park

Korea Aerospace Research Institute(KARI), Daejeon, 305-333, Korea
E-mail: shhwang@kari.re.kr

KARI(Korea Aerospace Research Institute) is developing KSR(Korean Sounding Rocket)-III to carry out scientific experiments during its ascending period. The calibration of interference filters of UV radiometer onboard the KSR-III with this system was performed. The flight model of UV radiometer was developed to measure the solar radiation over the Korean peninsular and to obtain the ozone density profile. The measured ozone slant density depends on the performance of the detector, so the calibration of the interference filter of UV radiometer is required to calculate the ozone slant column density. The calibration system consists of monochromator, OPM(Optical Power Meter), Detectors, light sources, control PC and data acquisition software. The monochromator has 4 gratings and 0.1nm step scan ability. Detectors are used to measure the light intensity passing through the filter, and OPM readouts the detected light intensity. The data acquisition software, TRACQ32 reads the calibration data and also controls the monochromator and the OPM settings, respectively. The calibration system is set at the Optical Lab. in KARI's Space Integration Test Center(SITC). We calibrated four interference filters with their center wavelengths at 255nm, 290nm, 310nm, and 450nm and successfully obtained the reasonable response functions. Angular responses of the phototubes of UV radiometer was obtained for the reference data of rocket attitude. Development of UV radiometer onboard the KSR-III and calibration results of interference filters and phototubes are presented with the implemented system.